

# MEASURING PROGRESS



*Since its beginning, the North American Waterfowl Management Plan has promoted partnerships. Hundreds of private landowners in North Dakota are working with government and nonprofit organizations to help increase duck populations.*

## NORTH AMERICAN WATERFOWL MANAGEMENT PLAN EVOLVING AFTER 15 YEARS

STORY AND PHOTOS BY CRAIG BIHRLE

In 15 years since the North American Waterfowl Management Plan was launched, the continental duck population has grown remarkably. While that's exactly what conservationists who founded this ambitious plan had in mind, the effort is far from complete.

For every measured success, there's still a looming challenge; for every noticeable gain, a legitimate concern. Even after 15 years, there's little leeway for rest or reflection.

***Reach the goal of a 100-million-bird fall flight?***

Redouble efforts to retain the Conservation Reserve Program.

***Break records for U.S. duck production?***

Maintain constant alert for threats to remaining wetland habitat.

***Increase waterfowl hunter numbers?***

Strive for new ways to involve more people in addressing the duck population issue.

In a way, it's much like a duck's world.

***Survive the long spring migration?***

Find a safe place to nest.

***Hatch a brood?***

Find a way to lead the ducklings safely to water.

***Succeed in raising ducklings to adult size?***

Lead them south for the winter.

Compared to the duck situation in the 1980s, when the NAWMP sounded a continental call to action, things are good. But all is not well...yet.

Waterfowl managers could not have predicted the extraordinary independent factors that wound up working together with various dedicated NAWMP projects to boost duck populations. Today, the future of all these major factors is uncertain. The Conservation Reserve Program and legislation that protects wetlands, while not originally part of the NAWMP, are vital to its continued success. Both are up for reauthorization in the next federal farm bill. While humans have the opportunity to decide the future of those, another important factor – the weather – is still beyond control.

Many NAWMP projects, from northern breeding grounds, to mid-continent migration habitat, to southern wintering grounds are designed to give ducks an edge when weather does not cooperate.

## WEATHER AND WATER

It is weather, after all, that helped diminish ducks into a desperate state in the first place. Ducks depend on water, and in the early 1980s the amount of water falling from the sky wasn't enough to keep up with water evaporating from ponds on the ground. At least, that was the case in the Prairie Pothole Region, that part of the Northern Great Plains dented with hundreds of thousands of water basins – from less than one to several hundred acres in size – called wetlands, potholes, marshes, lakes or duck sloughs.

While ducks live in most parts of North America at one time of year or other, many of those birds come to nest in the Prairie Pothole Region of south central

Canada and the north central U.S. Most of the ducks that migrate down the Central and Mississippi flyways come from this region.

North Dakota is right in the middle of this waterfowl-productive landscape. The central and northern parts of the state, especially, are liberally populated with potholes that serve as duck breeding territories, food factories and places to raise broods. Many ducks, however, need more than water. Mallards, pintail, teal and gadwall are just some of the species that build their nests in grass near some type of water.

Ducks have no interest in a place without water, regardless of whether grass is abundant, tall and lush. Water without grass isn't much good either, unless you're a ruddy duck, a species that builds nests on beds of floating cattail or other vegetation. Some duck species, like red-head and canvasback, nest in cattails and other vegetation immediately adjacent to wetlands; they are not considered "upland" nesters.

Just prior to European settlement, the Prairie Pothole Region was a vast grassland with millions of water basins of varying sizes, an ideal combination for producing ducks.

Fast forward a hundred years and the landscape had changed dramatically. Humans turned much of North Dakota's native grassland into agricultural cropland. In addition, human entrepreneurs found ways to drain water from more than half the state's original 5 million wetland acres.

This altered landscape brought North Dakota prosperity, but naturally it hurt the duck population. Similar activity had already reduced habitat in Prairie Pothole Region areas of Minnesota, Iowa, South Dakota and Montana. Canadians converted their prairies and wetlands as well, but through the 1970s the rate was not quite as rapid as in the U.S. When Canada was wet, it could still carry the load and produce a lot of ducks.

That scenario may have changed. While conversion of wetlands and grassland to cropland in the U.S. has slowed considerably since 1985, the rate has accelerated in prairie Canada – southern Manitoba, Saskatchewan and Alberta. Waterfowl officials are concerned that duck production potential in Canada is much reduced from what it was 25 years ago.

"We can't perpetuate duck populations on this continent with just the U.S.," warns Mike Johnson, waterfowl biologist for the North Dakota Game and Fish Department. "Sooner or later we're (North and South Dakota) going to go dry, and when that happens, there won't be any production in other areas to make up for that...we won't have ducks attracted to the only place they can nest successfully."

A little more than 20 years ago, on the heels of a couple of wet seasons that boosted duck production in the Prairie Pothole Region, U.S. duck hunters experienced some of the best hunting in decades. In North Dakota, 1978 and 1979 were two of the better years for duck harvest since the mid-1950s. When the '70s ended, however, the favorable weather pattern began to change.

A prolonged dry spell, in association with continuing habitat conversion, reduced the continental duck population to its lowest level since people began keeping records in the 1940s and 1950s. While duck populations have always fluctuated from year to year depending on whether pothole country is wet, dry or in-between, the landscape of the early to mid-1980s left little hope for a sufficient recovery even with good water conditions.

Waterfowl managers, politicians, hunters and conservationists looked at the waterfowl picture and saw crisis. The response was the North American Waterfowl Management Plan.

*North Dakota has hundreds of thousands of water basins that attract ducks.*



## NAWMP BASICS

In 1986 U.S. and Canadian officials signed an agreement pledging cooperation on reducing wetland loss and revitalizing the continent's sagging waterfowl populations. Mexico became part of the plan later. The initial concept was not for government to solve the problem, but for government to start a process that would involve everyone with an interest in turning the waterfowl world around.

In the U.S., Congress passed legislation called the North American Wetlands Conservation Act. The NAWCA was designed to provide matching funds to approved projects that benefit waterfowl in the U.S., Canada or Mexico. The match must be at least one-to-one on money committed to a project by non-federal partners. Each year, the amount of money appropriated by Congress to NAWCA can vary. Projects across the continent must compete for NAWCA matching dollars, and not every project submitted gets funded.

Because it is the leading duck producer in the United States – accounting for nearly half of the ducks raised in the lower 48 states, according to the U.S. Fish and Wildlife Service – North Dakota has received considerable attention. The state has six major project areas that have received nearly 15 million NAWCA dollars since 1990.

North Dakota is part of the Prairie Pothole Joint Venture, one of more than 30 joint ventures in the U.S. which deal with waterfowl and other wetland-dependent migratory bird habitat problems over large geographic areas.

Ducks Unlimited, the North Dakota Game and Fish Department, North Dakota Natural Resources Trust (formerly Wetland Trust), The Nature Conservancy and Delta Waterfowl Foundation are the major non-federal contributors, among more than 50 agencies and private organization partners, to commit more than \$15 million to improving conditions for duck production in North Dakota. The U.S. Fish and Wildlife Service is also an important player, redirecting more than \$8 million of its resources in North Dakota alone toward the waterfowl plan.

While some of the dollars spent in North Dakota are going to projects on public land, well over half of all NAWMP investments provide financial incentives to hundreds of private landowner partners who continue to incorporate new conservation practices into their operations. This link to private land is vital, emphasizes Jeff Nelson, Director of Operations for Ducks Unlimited's Great Plains Regional Office in Bismarck. "A lot of the habitat we have right now that produces ducks is

owned by private landowners," Nelson said.

In recent years, DU has invested considerable resources into a popular program called Grasslands for Tomorrow, which compensates landowners for protecting native grasslands from cultivation in areas that also have high wetland densities. "What we're trying to do is find ways of working with people who own the land," Nelson said, "to make sure the grasslands don't go away."

## PROGRAM EVOLUTION

Many private or public land programs initiated or expanded in North Dakota under the NAWMP address a missing piece of the duck production equation. Like trying to add water, such as restoring wetlands, in areas that already have grass. Or creating or maintaining upland cover in areas that have wetlands.

The North American Wetlands Conservation Act has funded 27 major projects in North Dakota. These projects so far have restored nearly 22,000 wetland acres, and protected or enhanced another 59,000 wetland acres and 440,000 associated upland acres.

At the time North Dakota's first NAWMP project – the Chase Lake Prairie Project centered in Stutsman and Kidder

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*Where wetlands are associated with Conservation Reserve Program grasslands, duck nesting success is higher than in areas with wetlands but little adjacent upland habitat.*



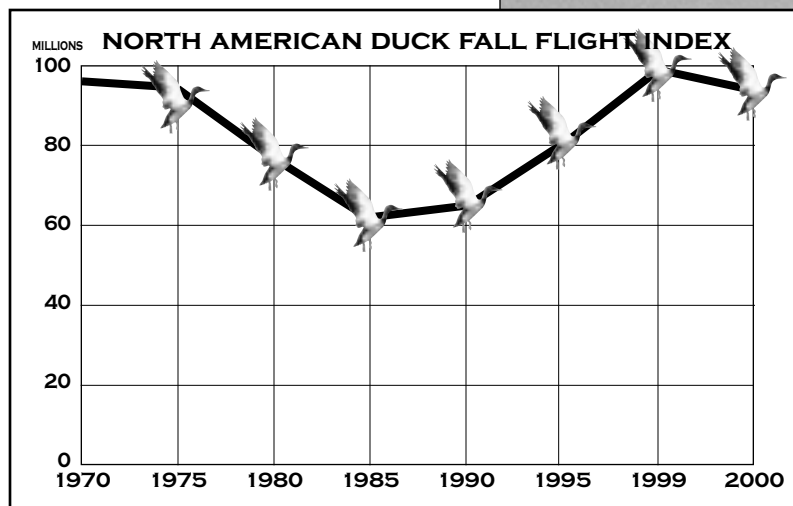
counties – got started in 1989, the Prairie Pothole Region was dry. For several years, Chase Lake and other projects dealt with opportunities to improve water conditions for ducks.

Other initiatives focused on some aspect of keeping predators away from ground-nesting duck nests. Partners built islands in dry wetland basins – islands that would provide relatively secure nesting habitat for ducks when and if water returned. Hundreds of man-made nesting structures were placed on private and public land, and partners constructed nearly a dozen electric fence enclosures that would keep predators away from prime nesting cover near water. Delta Waterfowl Foundation initiated a pilot study to gauge cost/benefits of direct predator removal from large geographic areas.

### THE PREDATOR FACTOR

Predators ate duck eggs and killed hens long before the first human wandered into the Prairie Pothole Region. But human changes to the landscape created advantages for some predators.

Large-scale human presence, in the first place, created a new environment in which some predators could thrive. Red fox, typically an animal of the woodland edge, moved in to establish residence on the prairies near planted shelterbelts and woodlots. Raccoons, another woodland



creature, also took advantage of new trees to expand their territories.

(Red fox today are overall the most significant duck predator on the prairie, because they cover a large territory and often kill hens on the nest in addition to robbing eggs. Raccoon and skunk are two other primary nest predators. The list of animals that occasionally eat duck eggs includes coyote, badger, crows, Franklin's ground squirrels and others. Mink are a significant predator of ducklings.)

At the same time, conversion of wetlands and grasslands to cropland forced many ducks into smaller areas of habitat. Even in areas with adequate water that attracted a lot of ducks, these birds had to make use of small, isolated areas of remaining grass. Red fox, skunk, raccoon and others became more successful predators when the territory they had to search for food was greatly reduced.

These changes didn't take place overnight. By the early 1970s, however, waterfowl managers were starting to document duck nesting success over a large part of the Prairie Pothole Region, including North Dakota, that wasn't high enough to maintain some species' populations. For mallards, that number is about 15 percent, but in areas with mostly isolated upland habitat, predators were destroying at least nine of every 10 nests.

When dry years in the early and mid-1980s exposed a continually eroding habitat base, the fall population of ducks in North America plunged to 62 million in 1985, the lowest level since the U.S. Fish and Wildlife Service began estimating a fall flight index in the early 1950s. "When the North American Plan was first thought about," Nelson said, "we were in a pretty dismal state of affairs for waterfowl."

*Duck populations have improved since the mid-1980s (above). In North Dakota, the spring breeding mallard index reached a record in 2001, about 10 times higher than the index in 1990.*





## HOPE ON THE HORIZON

Even before the NAWMP came about, the U.S. Congress passed legislation that eventually would go a long way toward improving duck numbers. The first Conservation Reserve Program, part of the 1985 federal farm bill, sought to reduce soil erosion by allowing farmers to retire highly erodible cropland and plant it to grass for 10-year periods. The CRP also sought to improve commodity prices by reducing nationwide grain production.

The '85 farm bill also included provisions called "Swampbuster" and "Sodbuster," which made farmers who continued to convert wetlands and native prairie to commodity production ineligible to participate in many federal farm programs. While these provisions didn't stop all wetland drainage or grassland plowing, they did greatly reduce the rate at which conversion occurred.

By 1990, North Dakota farmers had enrolled nearly 3 million acres of former cropland into the CRP. The good news was that around 2 million acres of that CRP grass was planted within pothole country in North Dakota. South Dakota also had more than a million acres of CRP in its prairie pothole range. The CRP provided large blocks of upland habitat waterfowl managers knew was necessary to better separate duck nests from predators.

The bad news was that from 1988 through 1992, perhaps 90 percent or more of the wetland basins in the Dakotas were dry. Duck populations continued to wane. The 1992 fall flight matched the all-time low recorded in 1985. Waterfowl people worried that CRP would run out before ducks had a chance to test the new environment when it had water.

Then it started to rain. And snow. Throughout pothole country, summer 1993 produced record rainfall, followed by a winter with record snowfall. All those wetland basins growing weeds in duck country suddenly started accumulating water. They started attracting ducks immediately, and those ducks started taking advantage of large expanses of nearby upland nesting cover. For the most part, the wet cycle that began in 1993 has continued through 2001 in both North and South Dakota. Many wetland basins have more water in them than at any time during the last 100 years.

In 1994 and 1995 the U.S. Fish and Wildlife Service, Ducks Unlimited and other NAWMP partners conducted an extensive study of duck nesting success in CRP grasslands. This study showed that nest success in landscapes containing CRP was significantly higher than nest success in similar landscapes before CRP. With nest success above the maintenance level in an area that was attracting several million breeding ducks, the duck populations began to climb.

By 1996 the USFWS fall flight index was 80 million; in 1997, 92 million. In 1999 the fall flight index reached a record level of 100 million ducks.

This fall flight index, based on USFWS surveyed areas, surpassed NAWMP goals for many species. One caution, however. NAWMP goals were based on "average" water conditions. While NAWMP accomplishments are many, much work remains to maintain duck populations at high levels under average water conditions.

## NORTH DAKOTA'S NEW ROLE

Each year North Dakota Game and Fish Department biologists conduct a spring breeding duck survey. They drive eight different established routes from the Canadian border to South Dakota, stopping to count all water areas and ducks within 220 yards of the road.

The survey began in 1948. The first time the breeding duck index went over 3 million was in 1995. The index nearly reached 5 million in 1997. The 2001 index weighed in at about 4.3 million. The highest seven indices were recorded the last seven years, statistical evidence that when North Dakota has water and grass, a lot of ducks come here to breed.

Waterfowl managers are paying close attention to what has occurred in North Dakota. "We've shown that under these conditions," says Ken Sambor, the Game and Fish Department's NAWMP coordinator, "ducks are capable of returning to pretty desirable population levels...we weren't sure they could ever rebound as well as they have."

While North Dakota isn't solely responsible for generating the duck comeback, its role given current conditions is more prominent than in the past. Right now, North Dakota probably has more ideal duck production habitat than anywhere else in the Prairie Pothole Region, including Canada.

"We're now convinced that, at least for most species, when it's wet we can grow duck populations to fairly high levels," says Ducks Unlimited's Nelson. "We know a lot of these birds came out of CRP

*Gadwalls (inset) are an upland nesting duck species that also responded to North Dakota's ideal habitat conditions.*



that was there when it got wet. We have a lot more wetlands than we would have had because of programs like Swampbuster...so we're in good shape, in our opinion."

Maintaining current duck populations is the continuing challenge to thousands of NAWMP partners across the continent. "I think everyone understands if there's no water at all, at least temporarily, we're not going to be able to maintain duck populations," Sambor said. "But if we can save what we've got, we can probably survive if we get a little help from nature."

### SAVING WHAT WE'VE GOT

North Dakota's wet cycle could end tomorrow or last another 20 years. In the next five years waterfowl managers hope to maintain or increase the wetland/upland habitat base, so that even if a drought occurs, ducks can begin multiplying when the water comes back. "We've learned that what you want to do is set the table so that when it gets wet," Nelson said, "everything's in place...that you've got

enough habitat that will be functional... like the native grasslands and CRP here (North Dakota) when the water came back. That saved the ducks."

During the '80s, Nelson added, a lot of people felt duck populations would never come back, but the rebound in the 1990s has generated hope and optimism.

Every project initiated under NAWMP is part of the effort to keep the table set. However, Sambor estimates that perhaps 20 percent of NAWMP habitat goals have been met. The potential for reaching these goals is much more realistic if land retirement and wetland protection are part of the next federal farm bill, which Congress will consider in 2002. Working to secure consideration for these measures is a high priority over the next year, Sambor said.

Current CRP contracts don't begin to expire until late in this decade, but farm bill wetland protection sunsets in 2002. Without renewed wetland protection, renewed large-scale drainage could make thousands of acres of CRP grassland ineffective as nesting habitat because of lack

of water to attract ducks. NAWMP objectives already suffered a blow because of a recent U.S. Supreme Court decision that removes isolated wetlands from protection under section 404 of the Clean Water Act. For the moment, most of these wetlands on agricultural land are still protected.

As the last decade verifies, the right combination works. The challenge as the North American Waterfowl Management Plan heads toward its 20th anniversary is not only keeping gains made the past 15 years, but also expanding the area in which that right combination can exist, if weather cooperates. While accomplishments are many, they are tenuous. Continued dedicated effort is the only way to keep the continent's waterfowl populations headed in the right direction.

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*Wetland restoration or improvement designed to help ducks also benefits many other species. In North Dakota, white pelicans are a prominent summer resident that depend on prairie potholes.*

